Regulatory Analysis

Notice of Intended Action to be published: Iowa Administrative Code 282—Chapter 13
"Teacher Licenses and Endorsements"

Iowa Code section(s) or chapter(s) authorizing rulemaking: 256.146
State or federal law(s) implemented by the rulemaking: Iowa Code section 256.146

Public Hearing

A public hearing at which persons may present their views orally or in writing will be held as follows:

September 11, 2024 9 a.m.	Board Room, Suite A 701 East Court Avenue Des Moines, Iowa

Public Comment

Any interested person may submit written or oral comments concerning this Regulatory Analysis. Written or oral comments in response to this Regulatory Analysis must be received by the Board of Educational Examiners no later than 4:30 p.m. on the date of the public hearing. Comments should be directed to:

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Purpose and Summary

This proposed chapter provides procedures for the issuance of teacher licenses. The Board proposes removing duplicative statutory language.

Analysis of Impact

1. Persons affected by the proposed rulemaking:

- Classes of persons that will bear the costs of the proposed rulemaking:

Required fees are paid by applicants.

- Classes of persons that will benefit from the proposed rulemaking:

Iowans in general will benefit from the proposed rulemaking.

2. Impact of the proposed rulemaking, economic or otherwise, including the nature and amount of all the different kinds of costs that would be incurred:

- Quantitative description of impact:

Required fees are paid by applicants. Fees are required for all Board operations.

- Qualitative description of impact:

The Board discerns no qualitative impact.

3. Costs to the State:

- Implementation and enforcement costs borne by the agency or any other agency:

The Board bears the cost of compliance.

- Anticipated effect on state revenues:

There is no effect on state revenues.

4. Comparison of the costs and benefits of the proposed rulemaking to the costs and benefits of inaction:

This chapter provides required procedures for the issuance of teacher licenses.

5. Determination whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rulemaking:

The Board bears the cost of compliance. Rules for licensure are required.

6. Alternative methods considered by the agency:

- Description of any alternative methods that were seriously considered by the agency:

The Board determined that the chapter is required but that the language could be significantly reduced.

- Reasons why alternative methods were rejected in favor of the proposed rulemaking:

There is a benefit to the public of having information about licensure requirements.

Small Business Impact

If the rulemaking will have a substantial impact on small business, include a discussion of whether it would be feasible and practicable to do any of the following to reduce the impact of the rulemaking on small business:

- Establish less stringent compliance or reporting requirements in the rulemaking for small business.
- Establish less stringent schedules or deadlines in the rulemaking for compliance or reporting requirements for small business.
- Consolidate or simplify the rulemaking's compliance or reporting requirements for small business.
- Establish performance standards to replace design or operational standards in the rulemaking for small business.
- Exempt small business from any or all requirements of the rulemaking.

If legal and feasible, how does the rulemaking use a method discussed above to reduce the substantial impact on small business?

There is no effect on small business.

Text of Proposed Rulemaking

ITEM 1. Rescind 282—Chapter 13 and adopt the following **new** chapter in lieu thereof:

CHAPTER 13
TEACHER LICENSES AND ENDORSEMENTS

282—13.1(256) Teacher licenses.

13.1(1) *Applicants from Iowa institutions.* An applicant will complete a minimum of a baccalaureate degree and all requirements to receive a recommendation for the specific license and endorsement(s) from the designated recommending official at the recognized institution where the preparation was completed.

13.1(2) *Applicants from non-Iowa institutions.*

a. Original application. An applicant from a non-Iowa institution applying for the applicant's first Iowa teaching license:

(1) Will meet the reciprocity requirements set forth in Iowa Code sections 256.152 and 272C.12. Endorsements will be granted based on comparable Iowa endorsements, and endorsement requirements may be waived in order to grant the most comparable endorsement.

(2) Will not be subject to any pending licensure disciplinary proceedings in any state or country.

b. Holders of an Iowa teaching license who applied under this rule prior to June 16, 2022, may submit a new application if the requirements in this subrule would have been met at the time of their initial application.

13.1(3) *Applicants from foreign institutions.* An applicant for initial licensure whose preparation was completed in a foreign institution will additionally obtain a course-by-course credential evaluation report completed by a board-approved provider showing the completion of a teacher preparation program in lieu of a valid or expired teaching license.

13.1(4) *Military veterans and spouses.*

a. Definitions.

"Military service" means honorably serving on federal active duty, state active duty, or national guard duty, as defined in Iowa Code section 29A.1; in the military services of other states, as provided in 10 U.S.C. Section 101(c); or in the organized reserves of the United States, as provided in 10 U.S.C. Section 10101.

"Veteran" means an individual who meets the definition of "veteran" in Iowa Code section 35.1(2).

b. Application fee waived for veterans, spouses, or spouses of active duty military service members applying for a teaching license. To receive a waiver of the application fee for a teaching license, a veteran will provide a copy of the veteran's DD 214. A spouse will provide a copy of the veteran spouse's DD 214 or current military orders and the couple's marriage license.

c. Military education, training, and service credit. An applicant under this rule may apply for credit for verified military education, training, or service toward any experience or educational requirement. The board of educational examiners will promptly determine whether the verified military education, training, or service will satisfy all or any part of the identified experience or educational requirement for licensure.

282—13.2(256) Initial license.

13.2(1) *Temporary initial license.* A temporary initial license valid for a minimum of two years with an expiration date of June 30 may be issued to an applicant who meets the requirements set forth in Iowa Code section 256.166 and rule 282—13.1(256).

13.2(2) *Initial license.* An initial license valid for a minimum of two years with an expiration date of June 30 may be issued to an applicant who meets the requirements set forth in rule 282—13.1(256).

282—13.3(256) Standard license. A standard license valid for five years may be issued to an applicant who meets the general requirements set forth in rule 282—13.1(256) and Iowa Code section 256.163.

282—13.4(256) Master educator license. A master educator license is valid for five years and may be issued to an applicant who:

1. Is the holder of or is eligible for a standard license as set out in rule 282—13.3(256), and
2. Provides verification of five years of successful teaching experience, and
3. Completes a master's degree.

282—13.5(256) Teacher intern license.

13.5(1) *Authorization.* The teacher intern is authorized to teach within qualified endorsement areas approved by the board of educational examiners for teacher internships.

13.5(2) *Term.* The term of the teacher intern license will be one school year. This license is nonrenewable.

13.5(3) *Teacher intern requirements.* A teacher intern license and endorsement may be issued to an applicant who has been recommended by an institution with a state-approved intern program.

13.5(4) *Teacher intern extension and experience.*

a. A one-year extension of the teacher intern license may be issued upon application to an applicant who needs additional time to complete the internship program.

b. Teaching experience completed during the term of the teacher intern license or extension may be used toward the experience requirement for the standard teaching license.

282—13.6(256) International teacher exchange program license. A nonrenewable international exchange program license may be issued to an applicant under the following conditions:

1. The applicant has completed a teacher education program in another country.
2. The applicant is a participant in a teacher exchange program administered through the Iowa department of education, the U.S. Department of Education, or the U.S. Department of State.
3. Each exchange license will be limited to the area(s) and level(s) of instruction as determined by an analysis of the application and the credential evaluation report.
4. This license will not exceed one year unless the applicant can verify continued participation in the exchange program.

282—13.7(256) Substitute license.

13.7(1) *Substitute teacher requirements.* A substitute license may be issued to an individual who is eligible to hold a teaching license in Iowa.

13.7(2) *Validity.* A substitute license is valid for five years and for not more than 90 days of teaching in one assignment during any one school year.

13.7(3) *Authorization.* The holder of a substitute license may substitute teach in any position in which a regularly licensed teacher is employed except in the driver's education classroom. The holders of temporary initial, initial, standard, master educator, professional administrator, regional exchange, full career and technical education authorization, full native language teaching authorization, full content specialist authorization, professional service license, and permanent professional licenses may substitute on the same basis as the holder of a substitute license while the regular license is in effect. The executive director may grant permission for a substitute to serve outside of a substitute's regular authority or past the day limitation under unique circumstances.

282—13.8(256) Permanent professional certificates. Effective October 1, 1988, the permanent professional certificate will no longer be issued. Any permanent professional certificate issued prior to October 1, 1988, will continue in force with the endorsements and approvals appearing thereon unless revoked or suspended for cause. If a permanent professional certificate is revoked and if the holder is able at a later date to overcome or remediate the reasons for the revocation, the holder may apply for the appropriate new class of license set forth in this chapter.

282—13.9(256) Requirements for preschool and elementary endorsements.

13.9(1) *Teacher—prekindergarten-kindergarten.*

a. Authorization. The holder of this endorsement is authorized to teach at the prekindergarten-kindergarten level. Applicants for this endorsement will also hold the teacher—elementary classroom endorsement set forth in this rule or the early childhood special education endorsement set forth in 282—subrule 14.1(1).

b. Content. A minimum of 18 semester hours to include the following:

(1) Child development and learning to include young children's characteristics and needs, with an emphasis on cognitive, language, physical, social, and emotional development, both typical and atypical; the multiple interacting influences on early development; and the creation of environments that are healthy, respectful, supportive, and challenging for each and every child.

(2) Building family and community relationships to include understanding that successful early childhood education depends upon reciprocal and respectful partnerships with families, communities, and agencies; that these partnerships have complex and diverse characteristics; and that all families should be involved in their children's development and learning.

(3) Assessment in early childhood to include child observation, documentation, and data collection; the development of appropriate goals; the benefits and uses of assessment for curriculum and instructional strategies; the use of technology when appropriate for assessment and adaptations; and building assessment partnerships with families to positively influence the development of each child.

(4) Developmentally effective approaches to include understanding how positive relationships and supportive interactions are the foundation of working with young children and families; knowing and understanding a wide array of developmentally appropriate approaches, including play and creativity, instructional strategies, and tools to connect with children and families; and reflecting on the teacher's own practice to promote positive outcomes for each child.

(5) Content knowledge to build a meaningful curriculum through the use of academic disciplines, including language and literacy, the arts (music, drama, dance, and visual arts), mathematics, science, social studies, physical activity, and health, for designing, implementing, and evaluating inquiry-based experiences that promote positive development and learning for each child.

(6) Collaboration and professionalism to include involvement in the early childhood field, knowledge about ethical and early childhood professional standards, engagement in continuous collaborative learning to inform practice, reflective and critical perspectives on early childhood education, and informed advocacy for young children and the profession.

(7) Field experiences and opportunities to observe and practice in a variety of early childhood settings, which include, at a minimum, 40 hours of observation and practice in a variety of preschool settings such as urban, rural, socioeconomic status, cultural diversity, program types, and program sponsorship.

(8) Historical, philosophical, and social foundations of early childhood education.

(9) Student teaching in a prekindergarten setting.

13.9(2) *Teacher—kindergarten through grade six.* The holder of this endorsement is authorized to teach in kindergarten and grades one through six.

a. Growth and development. Child growth and development with emphasis on the emotional, physical and mental characteristics of elementary age children unless completed as part of the professional education core.

b. Content. At least nine semester hours in literacy development, which will include:

(1) Content:

1. Oral and written communication development; and linguistics, including phonology and phonological awareness, sound-symbol association, syllable types, morphology, syntax and semantics, and the relationship of these components to typical and atypical reading development and reading instruction;
2. Phonemic awareness;
3. Word identification, including phonics and orthography;
4. Fluency;
5. Vocabulary;
6. Comprehension;
7. Writing mechanics;
8. Writing conventions;
9. Writing process;
10. Children's literature.

(2) Methods:

1. Assessment, diagnosis and evaluation of student learning in literacy, including the knowledge of the signs and symptoms of dyslexia and other reading difficulties;
2. Integration of the language arts (to include reading, writing, speaking, viewing, and listening);
3. Integration of technology in teaching and student learning in literacy;

4. Current best-practice, research-based strategies and instructional technology for designing and delivering effective instruction, including appropriate interventions, groupings, remediation, assistive technology, and classroom accommodations for all students including students with dyslexia and other difficulties;

5. Classroom management as it applies to literacy methods;

6. Pre-student teaching clinical experience in teaching literacy.

c. At least nine semester hours in mathematics, which will include:

(1) Content:

1. Numbers and operations;
2. Algebra/number patterns;
3. Geometry;
4. Measurement;
5. Data analysis/probability.

(2) Methods:

1. Assessment, diagnosis and evaluation of student learning in mathematics;
2. Current best-practice, research-based instructional methods in mathematical processes (to include problem-solving; reasoning; communication; the ability to recognize, make and apply connections; integration of manipulatives; the ability to construct and to apply multiple connected representations; and the application of content to real-world experiences);
3. Integration of technology in teaching and student learning in mathematics;
4. Classroom management as it applies to mathematics methods;
5. Pre-student teaching clinical experience in teaching mathematics.

d. At least nine semester hours in social sciences which will include:

(1) Content:

1. History;
2. Geography;
3. Political science/civic literacy;
4. Economics;
5. Behavioral sciences.

(2) Methods:

1. Current best-practice, research-based approaches to the teaching and learning of social sciences;
2. Integration of technology in teaching and student learning in social sciences;
3. Classroom management as it applies to social science methods.

e. At least nine semester hours in science, which will include:

(1) Content:

1. Physical science;
2. Earth/space science;
3. Life science.

(2) Methods:

1. Current best-practice, research-based methods of inquiry-based teaching and learning of science;
2. Integration of technology in teaching and student learning in science;
3. Classroom management as it applies to science methods.

f. At least three semester hours to include all of the following:

(1) Methods of teaching elementary physical education, health, and wellness;

(2) Methods of teaching visual arts for the elementary classroom;

(3) Methods of teaching performance arts for the elementary classroom.

g. Pre-student teaching field experience in at least two different grade levels to include one primary and one intermediate placement.

h. A field of specialization in a single discipline or a formal interdisciplinary program of at least 12 semester hours.

i. Student teaching in an elementary general education classroom.

282—13.10(256) Requirements for content area endorsements. Content methods courses that cover the specific endorsement area and grade levels are required in addition to the content coursework listed below.

13.10(1) *Agriculture.* 5-12. Completion of 24 semester credit hours in agriculture and agriculture education to include:

a. Foundations of vocational and career education.

b. Planning and implementing courses and curriculum.

c. Methods and techniques of instruction to include evaluation of programs and students.

d. Coordination of cooperative education programs.

e. Coursework in each of the following areas and at least three semester credit hours in five of the following areas:

(1) Agribusiness systems.

(2) Power, structural, and technical systems.

(3) Plant systems.

(4) Animal systems.

(5) Natural resources systems.

(6) Environmental service systems.

(7) Food products and processing systems.

13.10(2) *American Sign Language.* K-12. Completion of 18 semester hours of coursework in American Sign Language to include second-language acquisition, sociology of the deaf and hard-of-hearing community, linguistic structure of American Sign Language, language teaching methodology specific to American Sign Language, teaching the culture of deaf and hard-of-hearing people, and assessment of students in an American Sign Language program.

13.10(3) *Art.* K-8 and 5-12. Completion of 24 semester hours in art to include coursework in art history, studio art, and two- and three-dimensional art.

13.10(4) *Athletic coach.* K-12. An applicant for the coaching endorsement will hold a teaching license with a teaching endorsement and complete the following requirements:

a. One semester hour in the structure and function of the human body in relation to physical activity, and

b. One semester hour in human growth and development of children and youth as related to physical activity, and

c. Two semester hours in athletic conditioning, care and prevention of injuries and first aid as related to physical activity, and

d. One semester hour in the theory of coaching interscholastic athletics, and

e. Concussion training approved by the Iowa High School Athletic Association or Iowa Girls High School Athletic Union, and

f. A current certificate of CPR training from an approved provider.

13.10(5) *Business—all.* 5-12. Completion of 30 semester hours in business to include 6 semester hours in accounting; 3 semester hours in business law to include contract law; 3 semester hours in computer and technical applications in business; 6 semester hours in marketing to include consumer studies; 3 semester hours in management; 6 semester hours in economics; 3 semester hours in business communications to include formatting, language usage, and oral presentation; and coursework in entrepreneurship and financial literacy.

13.10(6) *Computer science.* K-8 and 5-12. Applicants will hold a valid Iowa teaching license with at least one additional teaching endorsement.

a. Content. A minimum of 12 semester hours of computer science to include coursework in the following:

(1) Data representation and abstraction to include primitive data types, static and dynamic data structures, and data types and stores.

(2) Designing, developing, testing and refining algorithms to include proficiency in two or more programming paradigms.

(3) Systems and networks to include operating systems, networks, mobile devices, and machine-level data representation.

b. Methods course. A computer science methods course to include the following:

(1) Curriculum development including recognizing and defining real-world computational problems; computing concepts and constructs; developing and using abstractions; creating, testing, and refining computational artifacts; and problem-solving strategies in computer science.

(2) Project-based methodologies that support active and authentic learning, fostering an inclusive computing culture, collaborative groupings, and opportunities for creative and innovative thinking.

(3) Communication about computing including multiple forms of media.

(4) Digital citizenship including the social, legal, ethical, safe and effective use of computer hardware, software, peripherals, and networks.

c. Computer science specialist. If the coursework requirements in this rule are met and the applicant achieves a minimum of 24 semester hours of computer science content, a computer science specialist endorsement will be granted and the additional teaching endorsement will not be required.

13.10(7) *Career and technical education (CTE) information technology.* 5-12. Applicants will hold a valid Iowa teaching license with at least one other teaching endorsement.

a. Content. Applicants will meet the coursework requirements for a computer science endorsement.

b. CTE methods.

(1) A minimum of six semester hours of career and technical curriculum and methods to include:

1. Foundations of career and technical education.
2. Methods of career and technical education.
3. Evaluation and assessment of career and technical programs.

(2) The CTE methods coursework is not required if the educator holds another career and technical endorsement.

13.10(8) *Driver education.* 5-12. Completion of nine semester hours in driver education to include coursework in accident prevention that includes drug and alcohol abuse, vehicle safety, and behind-the-wheel driving.

13.10(9) *Engineering.* 5-12.

a. Completion of 24 semester hours in engineering coursework.

b. Methods and strategies of STEM instruction or methods of teaching science or mathematics.

13.10(10) *English/language arts.*

a. K-8. Completion of 24 semester hours in English and language arts to include coursework in oral communication, written communication, language development, literacy, children's literature, creative drama or oral interpretation of literature, and American literature.

b. 5-12. Completion of 24 semester hours in English to include coursework in oral communication, written communication, language development, literacy, American literature, world literature, and adolescent literature.

c. 5-12 English language arts—all. Completion of 40 semester hours in English to include coursework in oral communication, written communication, language development, literacy, American literature, world literature, adolescent literature, creative voice, argumentation and debate, journalism, and mass media production.

d. 5-12 journalism. Completion of 15 semester hours in journalism to include coursework in writing, editing, production and visual communications.

e. K-8 speech communication/theater. Completion of 20 semester hours in speech communication/theatre to include coursework in speech communication, creative drama or theatre, and oral interpretation.

f. 5-12 speech communication/theater. Completion of 24 semester hours in speech communication/theatre to include coursework in speech communication, oral interpretation, creative drama or theatre, argumentation and debate, and mass media communication.

13.10(11) *English language learning (ELL).* K-12.

a. Authorization. The holder of this endorsement is authorized to teach English language learning in kindergarten and grades 1 through 12.

b. Content. Completion of 18 semester hours of coursework in English language learning to include the following:

(1) Knowledge of pedagogy to include the following:

1. Methods and curriculum to include the following:

- Bilingual and ELL methods.
- Literacy in native and second language.
- Methods for subject matter content.
- Adaptation and modification of curriculum.

2. Assessment to include language proficiency and academic content.

(2) Knowledge of linguistics to include the following:

1. Psycholinguistics and sociolinguistics.
2. Language acquisition and proficiency to include the following:

- Knowledge of first and second language proficiency.
- Knowledge of first and second language acquisition.
- Language to include structure and grammar of English.

(3) Knowledge of cultural and linguistic diversity to include the following:

1. History.
2. Theory, models, and research.
3. Policy and legislation.

(4) Current issues with transient populations.

13.10(12) *Family and consumer sciences—general.* 5-12. Completion of 24 semester hours in family and consumer sciences to include coursework in lifespan development, parenting and child development education, family studies, consumer resource management, textiles or apparel design and merchandising, housing, foods and nutrition, and foundations of career and technical education as related to family and consumer sciences.

13.10(13) *Health.* K-8 and 5-12. Completion of 24 semester hours, or 18 semester hours if the applicant holds a physical education or family and consumer science endorsement, in health to include coursework in public or community health, personal wellness, substance abuse, family life education, mental/emotional health, and human nutrition. A current certificate of CPR training is required in addition to the coursework requirements.

13.10(14) *Industrial technology.* 5-12. Completion of 24 semester hours in industrial technology to include coursework in manufacturing, construction, energy and power, graphic communications and transportation. Coursework is required in each area including at least 6 semester hours in three different areas.

13.10(15) *Librarian—school teacher.* K-8, 5-12, or PK-12.

a. Content. Completion of 24 semester hours in school library coursework to include the following:

(1) Literacy and reading. This requirement includes the following competencies at the elementary level for K-8 and secondary level for 5-12:

1. Practitioners collaborate with other teachers to integrate developmentally appropriate literature in multiple formats to support literacy for youth.
2. Practitioners demonstrate knowledge of resources and strategies to foster leisure reading and model personal enjoyment of reading, based on familiarity with selection tools and current trends in literature for youth.

3. Practitioners understand how to develop a collection of reading and informational materials in print and digital formats that supports the diverse developmental, cultural, social and linguistic needs of all learners and their communities.

4. Practitioners model and teach reading comprehension strategies to create meaning from text for youth.

(2) Information and knowledge. This requirement includes the following competencies:

1. Practitioners teach multiple strategies to locate, analyze, evaluate, and ethically use information in the context of inquiry-based learning.

2. Practitioners advocate for flexible and open access to library resources, both physical and virtual.

3. Practitioners uphold and promote the legal and ethical codes of their profession, including privacy, confidentiality, freedom and equity of access to information.

4. Practitioners use skills and knowledge to assess reference sources, services, and tools in order to mediate between information needs and resources to assist learners in determining what they need.

5. Practitioners model and facilitate authentic learning with current and emerging digital tools for locating, analyzing, evaluating and ethically using information resources to support research, learning, creating, and communicating in a digital society.

6. Practitioners demonstrate knowledge of creative and innovative uses of technologies to engage students and facilitate higher-level thinking.

7. Practitioners develop an articulated information literacy curriculum grounded in research related to the information search process.

8. Practitioners understand the process of collecting, interpreting, and using data to develop new knowledge to improve the school library program.

9. Practitioners employ the methods of research in library and information science.

(3) Program administration and leadership. This requirement includes the following competencies:

1. Practitioners evaluate and select print, nonprint, and digital resources using professional selection tools and evaluation criteria to develop and manage a quality collection designed to meet the diverse curricular, personal, and professional needs of the educational community.

2. Practitioners demonstrate knowledge necessary to organize the library collections according to current standard library cataloging and classification principles.

3. Practitioners develop policies and procedures to support ethical use of information, intellectual freedom, selection and reconsideration of library materials, and the privacy of users of all ages.

4. Practitioners develop strategies for working with regular classroom teachers, support services personnel, paraprofessionals, and other individuals involved in the educational program.

5. Practitioners demonstrate knowledge of best practices related to planning, budgeting (including alternative funding), organizing, and evaluating human and information resources and facilities to ensure equitable access.

6. Practitioners understand strategic planning to ensure that the school library program addresses the needs of diverse communities.

7. Practitioners advocate for school library and information programs, resources, and services among stakeholders.

8. Practitioners promote initiatives and partnerships to further the mission and goals of the school library program.

(4) Practicum. This requirement includes the following competencies at the elementary level for K-8 and secondary level for 5-12:

1. Practitioners apply knowledge of learning styles, stages of human growth and development, and cultural influences of learning at the elementary or secondary levels.

2. Practitioners implement the principles of effective teaching and learning that contribute to an active, inquiry-based approach to learning in a digital environment at the elementary or secondary levels.

3. Practitioners understand the teacher librarian role in curriculum development and the school improvement process at the elementary or secondary levels.

4. Practitioners collaborate to integrate information literacy and emerging technologies into content area curricula.

13.10(16) *Literacy—reading.* K-8 and 5-12. Completion of 24 semester hours in reading to include all of the following requirements:

a. Foundations of reading. This requirement includes the following competencies:

(1) The practitioner demonstrates knowledge of the psychological, sociocultural, motivational, and linguistic foundations of reading and writing processes and instruction.

(2) The practitioner demonstrates knowledge of a range of research pertaining to reading, writing, and learning, including the analysis of scientifically based reading research, and knowledge of histories of reading. The range of research encompasses research traditions from the fields of the social sciences and other paradigms appropriate for informing practice and also definitions of reading difficulties including but not limited to dyslexia.

(3) The practitioner demonstrates knowledge of the major components of reading, such as comprehension, vocabulary, word identification, fluency, phonics, and phonemic awareness, and effectively integrates curricular standards with student interests, motivation, and background knowledge.

b. Reading curriculum and instruction. This requirement includes the following competencies:

(1) The practitioner demonstrates knowledge of designing and implementing an integrated, comprehensive, and balanced curriculum that addresses the major components of reading and contains a wide range of texts, including but not limited to narrative, expository, and poetry, and including traditional print, digital, and online resources.

(2) The practitioner uses knowledge of a range of research-based strategies and instructional technology for designing and delivering effective instruction, including appropriate interventions, remediation, assistive technology, and classroom accommodations for students with dyslexia and other difficulties.

(3) The practitioner demonstrates knowledge of grouping students, selecting materials appropriate for learners with diverse abilities at various stages of reading and writing development, differentiating instruction to meet the unique needs of all learners, including students with dyslexia, offering sufficient opportunities for students to practice reading skills, and providing frequent and specific instructional feedback to guide students' learning.

(4) The practitioner demonstrates knowledge of designing instruction to meet the needs of diverse populations, including populations in urban, suburban, and rural settings, as well as for students from various cultural and linguistic backgrounds.

(5) The practitioner demonstrates knowledge of creating a literate physical environment that is low risk, supports students as agents of their own learning, and supports a positive socio-emotional impact for students to identify as readers.

c. Reading assessment, diagnosis and evaluation. This requirement includes the following competencies:

(1) The practitioner understands types of reading and writing assessments and their purposes, strengths, and limitations.

(2) The practitioner demonstrates knowledge of selecting and developing appropriate assessment instruments, procedures, and practices that range from individual to group and from formal to informal to alternative for the identification, screening, and diagnosis of all students' reading proficiencies and needs including knowledge of the signs and symptoms of dyslexia and other reading difficulties.

(3) The practitioner demonstrates knowledge of assessment data analysis to inform, plan, measure, progress monitor, and revise instruction for all students and to communicate the outcomes of ongoing assessments to all stakeholders.

(4) The practitioner demonstrates awareness of policies and procedures related to special programs, including Title I.

d. Reading in the content areas. This requirement includes the following competencies:

(1) The practitioner demonstrates knowledge of morphology and the etymology of words, along with text structure and the dimensions of content area vocabulary and comprehension, including literal, interpretive, critical, and evaluative.

(2) The practitioner demonstrates an understanding of reading theory, reading knowledge, and a variety of research-based strategies and approaches to provide effective literacy instruction into content areas.

(3) The practitioner demonstrates knowledge of integrating literacy instruction into content areas for all students, including but not limited to students with disabilities, students who are at risk of academic failure, students who have been identified as gifted and talented, students who have limited English language proficiency, and students with dyslexia, whether or not such students have been identified as children requiring special education under Iowa Code chapter 256B.

e. Language development. This requirement includes the following competency: The practitioner uses knowledge of oral language development, linguistics including phonology and phonological awareness, sound-symbol association, syllable types, morphology, syntax and semantics and the relationship of these components to typical and atypical reading development and reading instruction, cognitive academic language development, oral and written language proficiency (including second language development), acquisition of reading skills, and the variations related to cultural and linguistic diversity to provide effective instruction in reading and writing.

f. Oral communication instruction. This requirement includes the following competencies:

(1) The practitioner has knowledge of the unique needs and backgrounds of students with language differences and delays.

(2) The practitioner uses effective strategies for facilitating the learning of language for academic purposes by all learners.

g. Written communication instruction. This requirement includes the following competency: The practitioner uses knowledge of reading-writing-speaking connections; the writing process to include structures of language and grammar; the stages of spelling development; the different types of writing, such as narrative, expressive, persuasive, informational, and descriptive; and the connections between oral and written language development to effectively teach writing as communication.

h. Children's fiction and nonfiction (K-8 only) or adolescent or young adult fiction and nonfiction (5-12 only). This requirement includes the following competency: The practitioner uses knowledge of children's literature (K-8) or adolescent or young adult literature (5-12) for:

(1) Modeling the reading and writing of varied genres, including fiction and nonfiction; technology- and media-based information; and nonprint materials;

(2) Motivating through the use of texts at multiple levels, representing broad interests, and reflecting varied cultures, linguistic backgrounds, and perspectives; and

(3) Matching text complexities to the proficiencies and needs of readers.

i. Practicum. This requirement includes the following competencies:

(1) The practitioner works with appropriately licensed professionals who observe, evaluate, and provide feedback on the practitioner's knowledge, dispositions, and performance of the teaching of reading and writing.

(2) The practitioner effectively uses reading and writing strategies, materials, and assessments based upon appropriate reading and writing research and works with colleagues and families in the support of children's reading and writing development.

13.10(17) *Literacy—reading specialist.* K-12. The applicant will have met the requirements for the standard license and a K-8 or 5-12 reading endorsement and will present evidence of at least three years of experience that included the teaching of reading as a significant part of the responsibility.

a. Authorization. The holder of this endorsement is authorized to serve as a reading specialist in kindergarten and grades 1 through 12.

b. Program requirements. Degree—master's.

c. Content. Completion of a sequence of courses and experiences, which may have been a part of, or in addition to, the degree requirements. This sequence is to be at least 24 semester hours to include the following:

(1) Foundations of reading. The reading specialist will understand the historical, theoretical, and evidence-based foundations of reading and writing processes and instruction and will be able to interpret these findings to model exemplary instructional methods for students with typical and atypical literacy development and effectively develop and lead professional development.

(2) Curriculum and instruction. The reading specialist will use instructional approaches, materials, and an integrated, comprehensive, balanced curriculum to support student learning in reading and writing including the following:

1. Work collaboratively with teachers to develop a literacy curriculum that has vertical and horizontal alignment K-12 and that uses instructional approaches supported by literature and research for the following areas: print, phonemic awareness, phonics, fluency, comprehension, vocabulary, writing, critical thinking, and motivation.

2. Support classroom teachers to implement and adapt in-depth instructional approaches, including but not limited to approaches to improve decoding, comprehension, and information retention, to meet the language-proficiency needs of English language learners and the needs of students with reading difficulties or reading disabilities, including appropriate interventions, remediation, assistive technology, and classroom accommodations for students with dyslexia and other difficulties within or outside the regular classroom.

3. Demonstrate a knowledge of a wide variety of quality traditional print, digital, and online resources and support classroom teachers in building and using a quality, accessible classroom library and materials collection that meets the specific needs and abilities of all learners.

4. Provide support for curriculum and instruction through modeling, coteaching, observing, planning, reviewing literacy data, and providing resources.

(3) Assessment, diagnosis, and evaluation. The reading specialist will use a variety of assessment tools and practices to plan and evaluate effective reading and writing instruction including the following:

1. Demonstrate an understanding of the literature and research related to assessments and their purposes, including the strengths and limitations of assessments, and assessment tools for screening, diagnosis, progress monitoring, and measuring outcomes; demonstrate an understanding of the signs and symptoms of reading difficulties including but not limited to dyslexia; and also demonstrate an understanding of district and state assessments, proficiency standards and student benchmarks.

2. Select, administer, and interpret assessments for specific purposes, including collaboration with teachers in the analysis of data, and leading schoolwide or districtwide scale analyses to select assessment tools that provide a systemic framework for assessing reading, writing, and language growth of all students, including those with reading difficulties and reading disabilities including but not limited to students with dyslexia and English language learners.

3. Use assessment information to plan and evaluate instruction, including multiple data sources for analysis and instructional planning, for examining the effectiveness of specific intervention practices and students' responses to interventions including appropriate interventions, remediation, assistive technology, and classroom accommodations for students with dyslexia and other difficulties, and to plan professional development initiatives.

4. Communicate assessment results and implications to a variety of audiences.

(4) Administration and supervision of reading programs. The reading specialist will:

1. Demonstrate foundational knowledge of adult learning theories and related research about organizational change, professional development, and school culture.

2. Demonstrate the practical application of literacy leadership including planning, developing, supervising, and evaluating literacy programs at all levels.

3. Demonstrate knowledge of supervising an overall reading program, including but not limited to staffing; budgetary practices; planning, preparing, and selecting materials; subsystems; special provisions; and evaluating teacher performance.

4. Participate in, design, facilitate, lead, and evaluate effective and differentiated professional development programs to effectively implement literacy instruction.

5. Demonstrate an understanding of local, state, and national policies that affect reading and writing instruction.

6. Promote effective communication and collaboration among stakeholders, including parents and guardians, teachers, administrators, policymakers, and community members, and advocate for change when necessary to promote effective literacy instruction.

(5) Educational research, measurement and evaluation. The reading specialist will effectively utilize existing research and learn to conduct new research to continuously improve the design and implementation of a comprehensive reading system.

(6) Psychology of language and reading. The reading specialist will understand the highly complex processes by which children learn to speak, read, and write, including language acquisition, linguistics including phonology and phonological awareness, sound-symbol association, syllable types, morphology, syntax and semantics and the relationship of these components to typical and atypical reading development and reading instruction, ranges of individual differences, reading difficulties and reading disabilities, including but not limited to dyslexia, and the importance of the role of diversity in learning to read and write.

(7) Practicum in reading leadership. The reading specialist will participate in elementary and secondary practicum experiences with licensed teachers who are serving in leadership roles in the area of reading.

13.10(18) *Literacy—dyslexia specialist.* K-12. The applicant will have met the requirements for the standard license and have completed at least three years of postbaccalaureate teaching experience in a K-12 setting. Applicants who have achieved dyslexia certification in another state may apply for a certification review through the Iowa reading research center.

a. Authorization. The holder of this endorsement is authorized to serve as a dyslexia specialist in kindergarten and grades 1 through 12.

b. Content. Completion of 18 semester hours in dyslexia strategies to include the following:

(1) Knowledge of dyslexia. The dyslexia specialist will have knowledge of dyslexia and:

1. Understand the tenets of the International Dyslexia Association's definition of dyslexia, including the neurobiological nature and cognitive-linguistic correlates.

2. Identify distinguishing characteristics of dyslexia and commonly co-occurring disorders, including dysgraphia, dyscalculia, attention deficit hyperactivity disorder, expressive language disorders, receptive language disorders, and others.

3. Recognize that dyslexia may present differently along a continuum of severity and impact depending upon age, grade, and compensatory factors.

4. Understand federal and state laws that pertain to dyslexia, including use of the word "dyslexia" within school settings and documentation.

5. Understand common misconceptions regarding characteristics of and interventions for dyslexia.

(2) Psychology of language and reading. The dyslexia specialist will understand the highly complex processes by which children learn to speak, read, and write, including language acquisition, linguistics, and the structure of written language, including phonological processing, phonics, orthography, morphology, syntax, and semantics, as well as the relationship of these components to typical and atypical reading and writing development and instruction for students with dyslexia.

(3) Curriculum and instruction. The dyslexia specialist will use appropriate instructional approaches and materials including preparation in more than one curriculum as well as integrated, comprehensive, explicit, and systematic literacy instruction to support student learning in reading and writing, including the following:

1. Instruction utilizing multisensory and multimodal strategies (visual, auditory, kinesthetic, and tactile), systematic and cumulative instruction, direct instruction, diagnostic and prescriptive teaching, as well as synthetic and analytic instruction.
2. Instructional approaches supported by the science of reading for the following areas: phonological processing, phonics, fluency, comprehension, vocabulary, spelling, and writing.
3. Creation of a dyslexia-friendly learning environment (within or outside the regular classroom) utilizing evidence-based accommodations and modifications to meet the needs of students with dyslexia, including appropriate interventions, remediation, assistive technology, and classroom accommodations for students with dyslexia.
4. Use of data to determine effectiveness of the instruction and curriculum along with student responsiveness to it.

(4) Assessment, diagnosis, and evaluation. The dyslexia specialist will be confident using a variety of formal assessment tools and practices to evaluate students' reading and writing abilities in a variety of domains. The dyslexia specialist will:

1. Demonstrate an understanding of the literature and research related to assessments and their purposes (including the strengths and limitations of assessments) and assessment tools for screening, diagnosis, progress monitoring, and measuring outcomes.
2. Demonstrate an understanding of the signs and symptoms of reading difficulties, including but not limited to dyslexia, and also demonstrate an understanding of norms and student benchmarks.
3. Select, administer, and interpret assessments for specific purposes, including screening students at risk for dyslexia and identifying students who display a profile of dyslexia, and:

- Understand the features of standardized norm-referenced assessments.
- Understand the importance of selecting reliable and valid assessments to evaluate typical and atypical reading development.
- Interpret various scores derived from standardized norm-referenced and criterion-referenced assessments.

4. Use assessment information to plan and evaluate instruction, including appropriate interventions, remediation, assistive technology, and classroom accommodations for students with dyslexia and other difficulties. This will include the use of multiple data sources for analysis, instructional planning, examining the effectiveness of specific intervention practices, and examining students' responses to interventions.
5. Communicate assessment results and implications to a variety of audiences, including staff, parents, and students.
6. Understand appropriate IEP goals and Section 504 plans for students who display characteristics of dyslexia.

(5) Practicum in dyslexia. The dyslexia specialist will participate in elementary and secondary practicum experiences with instructors who have experience with and are currently serving students who display characteristics of dyslexia. The practicum will include:

1. Supervised administration of norm-referenced literacy assessments.
2. Practice composing a report of literacy assessment results that will include interpretation of the results and instructional recommendations.
3. Supervised delivery of systematic, explicit, and multisensory intervention for students with characteristics of dyslexia.
4. Practice composing a report of students' response to intervention.

13.10(19) *Mathematics.*

a. K-8. Completion of 24 semester hours in mathematics to include coursework in algebra, geometry, number theory, measurement, computer programming, and probability and statistics.

b. 5-12.

(1) Completion of 24 semester hours in mathematics to include a linear algebra or an abstract (modern) algebra course, a geometry course, a two-course sequence in calculus, a computer programming course, a probability and statistics course, and coursework in discrete mathematics.

(2) For holders of the 5-12 physics or 5-12 all science endorsement, completion of 17 semester hours in mathematics to include a geometry course, a two-course sequence in calculus, a probability and statistics course, and coursework in discrete mathematics.

c. 5-8 algebra for high school credit. Hold a K-8 mathematics, middle school mathematics, K-8 STEM, or 5-8 STEM endorsement and complete a course titled college algebra or a higher algebra course.

d. 5-12 mathematics—basic. Completion of 24 semester hours in mathematics, which will minimally include a course titled college algebra or a higher algebra course, a geometry course, a computer programming course, and a probability and statistics course.

13.10(20) *Middle school language arts, mathematics, science, social studies.*

a. Middle school pedagogy. A minimum of nine semester hours in the following:

(1) Coursework in the growth and development of the middle school age child.

(2) Coursework in middle school design, curriculum, instruction, and assessment.

(3) Coursework in middle school literacy strategies including incorporating literacy in the curriculum.

b. Concentration areas. Two or more of the following concentration areas are required:

(1) For 5-8 language arts, 12 semester hours in language arts to include coursework in composition, language usage, speech, young adult literature, and literature across cultures.

(2) For 5-8 mathematics, 12 semester hours in mathematics to include coursework in algebra.

(3) For 5-8 science, 12 semester hours in science to include coursework in life science, earth science, and physical science.

(4) For 5-8 social studies, 12 semester hours to include coursework in United States history, world history, government and geography.

13.10(21) *Multioccupations.* 5-12. Completion of any 5-12 endorsement and coursework in foundations of career and technical education and coordination of cooperative programs. Holders of the career and technical authorization are eligible to apply to add this endorsement.

13.10(22) *Music.* K-8 and 5-12. Completion of 24 semester hours in music to include coursework in music theory (at least two courses), music history (at least two courses), applied music, a methods course in each of the following: general, choral, and instrumental music, and for the 5-12 endorsement only, coursework in conducting.

13.10(23) *Physical education.*

a. K-8. Completion of 24 semester hours in physical education to include coursework in human anatomy, human physiology, movement education, adaptive physical education, personal wellness, human growth and development of children related to physical education, and first aid and emergency care. A current certificate of CPR training is required in addition to the coursework requirements.

b. 5-12. Completion of 24 semester hours in physical education to include coursework in human anatomy, kinesiology, human physiology, human growth and development related to maturational and motor learning, adaptive physical education, curriculum and administration of physical education, personal wellness, and first aid and emergency care. A current certificate of CPR training is required in addition to the coursework requirements.

13.10(24) *Professional school counselor.* K-8 and 5-12.

a. Program requirements. Master's degree from an accredited institution of higher education.

b. Content. Completion of a sequence of courses and experiences that may have been a part of, or in addition to, the degree requirements to include the following:

(1) Nature and needs of individuals at all developmental levels.

1. Develop strategies for facilitating development through the transition from childhood to adolescence and from adolescence to young adulthood.

2. Apply knowledge of learning and personality development to assist students in developing their full potential.

(2) Social and cultural foundations.

1. Demonstrate awareness of and sensitivity to the unique social, cultural, and economic circumstances of students and their racial/ethnic, gender, age, physical, and learning differences.

2. Demonstrate sensitivity to the nature and the functioning of the student within the family, school and community contexts.

3. Demonstrate the counseling and consultation skills needed to facilitate informed and appropriate action in response to the needs of students.

(3) Fostering of relationships.

1. Employ effective counseling and consultation skills with students, parents, colleagues, administrators, and others.

2. Communicate effectively with parents, colleagues, students and administrators.

3. Counsel students in the areas of personal, social, academic, and career development.

4. Assist families in helping their children address the personal, social, and emotional concerns and problems that may impede educational progress.

5. Implement developmentally appropriate counseling interventions with children and adolescents.

6. Demonstrate the ability to negotiate and move individuals and groups toward consensus or conflict resolution or both.

7. Refer students for specialized help when appropriate.

8. Value the well-being of the students as paramount in the counseling relationship.

(4) Group work.

1. Implement developmentally appropriate interventions involving group dynamics, counseling theories, group counseling methods and skills, and other group work approaches.

2. Apply knowledge of group counseling in implementing appropriate group processes for elementary, middle school, and secondary students.

(5) Career development, education, and postsecondary planning.

1. Assist students in the assessment of their individual strengths, weaknesses, and differences, including those that relate to academic achievement and future plans.

2. Apply knowledge of career assessment and career choice programs.

3. Implement occupational and educational placement, follow-up and evaluation.

4. Develop a counseling network and provide resources for use by students in personalizing the exploration of postsecondary educational opportunities.

(6) Assessment and evaluation.

1. Demonstrate individual and group approaches to assessment and evaluation.

2. Demonstrate an understanding of the proper administration and uses of standardized tests.

3. Apply knowledge of test administration, scoring, and measurement concerns.

4. Apply evaluation procedures for monitoring student achievement.

5. Apply assessment information in program design and program modifications to address students' needs.

6. Apply knowledge of legal and ethical issues related to assessment and student records.

(7) Professional orientation.

1. Apply knowledge of history, roles, organizational structures, ethics, standards, and credentialing.

2. Maintain a high level of professional knowledge and skills.

3. Apply knowledge of professional and ethical standards to the practice of school counseling.

4. Articulate the professional school counselor role to school personnel, parents, community, and students.

(8) School counseling skills.

1. Design, implement, and evaluate a comprehensive, developmental school counseling program.

2. Implement and evaluate specific strategies designed to meet program goals and objectives.

3. Consult and coordinate efforts with resource persons, specialists, businesses, and agencies outside the school to promote program objectives.

4. Provide information appropriate to the particular educational transition and assist students in understanding the relationship that their curricular experiences and academic achievements will have on subsequent educational opportunities.

5. Assist parents and families in order to provide a supportive environment in which students can become effective learners and achieve success in pursuit of appropriate educational goals.

6. Provide training, orientation, and consultation assistance to faculty, administrators, staff, and school officials to assist them in responding to the social, emotional, and educational development of all students.

7. Collaborate with teachers, administrators, and other educators in ensuring that appropriate educational experiences are provided that allow all students to achieve success.

8. Assist in the process of identifying and addressing the needs of the exceptional student.

9. Apply knowledge of legal and ethical issues related to child abuse and mandatory reporting.

10. Advocate for the educational needs of students and work to ensure that these needs are addressed at every level of the school experience.

11. Promote use of school counseling and educational and career planning activities and programs involving the total school community to provide a positive school climate.

(9) Classroom management.

1. Apply effective classroom management strategies as demonstrated in delivery of classroom and large group school counseling curriculum.

2. Consult with teachers and parents about effective classroom management and behavior management strategies.

(10) Curriculum.

1. Write classroom lessons including objectives, learning activities, and discussion questions.

2. Utilize various methods of evaluating what students have learned in classroom lessons.

3. Demonstrate competency in conducting classroom and other large group activities, utilizing an effective lesson plan design, engaging students in the learning process, and employing age-appropriate classroom management strategies.

4. Design a classroom unit of developmentally appropriate learning experiences.

5. Demonstrate knowledge in writing standards and benchmarks for curriculum.

(11) Learning theory.

1. Identify and consult with teachers about how to create a positive learning environment utilizing such factors as effective classroom management strategies, building a sense of community in the classroom, and cooperative learning experiences.

2. Identify and consult with teachers regarding teaching strategies designed to motivate students using small group learning activities, experiential learning activities, student mentoring programs, and shared decision-making opportunities.

3. Demonstrate knowledge of child and adolescent development and identify developmentally appropriate teaching and learning strategies.

(12) Teaching and counseling practicum. The candidate will complete a preservice supervised practicum of a minimum of 100 hours, and at least 40 of these hours will be direct service. Candidates will complete a supervised internship for a minimum of 600 hours, and at least 240 of these hours will be direct service. For candidates seeking both the K-8 and 5-12 professional school counselor endorsements, a minimum of 100 hours of the practicum or internship experiences listed above will be completed at each of the desired endorsement levels.

13.10(25) *Science.*

a. Science—basic. K-8. Completion of at least 24 semester hours in science to include 12 hours in physical sciences, 6 hours in biology, and 6 hours in earth/space sciences.

b. Biological science. 5-12. Completion of 24 semester hours in biological science or 30 semester hours in the broad area of science to include 15 semester hours in biological science.

c. Chemistry. 5-12. Completion of 24 semester hours in chemistry or 30 semester hours in the broad area of science to include 15 semester hours in chemistry.

d. Earth science. 5-12. Completion of 24 semester hours in earth science or 30 semester hours in the broad area of science to include 15 semester hours in earth science.

e. Physics.

(1) 5-12. Completion of 24 semester hours in physics or 30 semester hours in the broad area of science to include 15 semester hours in physics.

(2) For holders of the mathematics 5-12 endorsement, completion of:

1. 12 credits of physics to include coursework in mechanics, electricity, and magnetism; and

2. A methods class that includes inquiry-based instruction, resource management, and laboratory safety.

(3) For holders of the chemistry 5-12 endorsement, completion of 12 credits of physics to include coursework in mechanics, electricity, and magnetism.

f. Basic science. 5-12. Completion of 24 semester hours of credit in science to include 6 semester hours in earth and space science, 6 semester hours in life science/biological science, 6 semester hours in physics/physical science, and 6 semester hours of credit in chemistry.

g. All science. 5-12. Completion of 36 semester hours in science to include 9 semester hours in earth and space science, 9 semester hours in life science/biological science, 9 semester hours in physics/physical science, and 9 semester hours of credit in chemistry.

13.10(26) *STEM.* K-8 and 5-8. For 5-8 STEM, be the holder of a 5-12 science, mathematics, or industrial technology endorsement or 5-8 middle school mathematics or science endorsement.

a. Content.

1. Completion of 12 semester hours of college-level science.

2. Completion of 12 semester hours of college-level math (or the completion of Calculus I) to include coursework in computer programming.

3. Completion of a minimum of three semester hours of coursework in content or pedagogy of engineering and technological design that includes engineering design processes or programming logic and problem-solving models and that may be met through either of the following:

- Engineering and technological design courses for education majors;
- Technology or engineering content coursework.

4. Completion of a minimum of six semester hours of required coursework in STEM curriculum and methods to include the following essential concepts and skills:

- Comparing and contrasting the nature and goals of each of the STEM disciplines;
- Promoting learning through purposeful, authentic, real-world connections;
- Integration of content and context of each of the STEM disciplines;
- Interdisciplinary/transdisciplinary approaches to teaching (including but not limited to problem-based learning and project-based learning);
- Curriculum and standards mapping;
- Engaging subject-matter experts (including but not limited to colleagues, parents, higher education faculty/students, business partners, and informal education agencies) in STEM experiences in and out of the classroom;
- Assessment of integrative learning approaches;
- Information literacy skills in STEM;
- Processes of science and scientific inquiry;
- Mathematical problem-solving models;
- Communicating to a variety of audiences;
- Classroom management in project-based classrooms;

- Instructional strategies for the inclusive classroom;
- Computational thinking;
- Mathematical and technological modeling.

5. Completion of a STEM field experience of a minimum of 30 contact hours that may be met through the following:

- Completing a STEM research experience;
- Participating in a STEM internship at a STEM business or informal education organization; or
- Leading a STEM extracurricular activity.

b. STEM specialist K-12.

(1) Authorization. The holder of this endorsement is authorized to serve as a STEM specialist in kindergarten and grades 1 through 12.

(2) Program requirements.

1. The applicant will have met the requirements for a standard Iowa teaching license and a teaching endorsement in mathematics, science, engineering, industrial technology, or agriculture.

2. The applicant will hold a master's degree in math, science, engineering or technology or another area with at least 12 hours of college-level science and at least 12 hours of college-level math (or completion of Calculus I) to include coursework in computer programming.

(3) Content. Completion of the engineering and STEM coursework required for the K-8 or 5-8 STEM endorsement, three additional semester hours in STEM leadership, and an internship/externship professional experience or prior professional experience in STEM for a minimum of 90 contact hours.

13.10(27) *Social sciences.*

a. American government. 5-12. Completion of 24 semester hours in American government or 30 semester hours in the broad area of social sciences to include 15 semester hours in American government.

b. American history. 5-12. Completion of 24 semester hours in American history or 30 semester hours in the broad area of social sciences to include 15 semester hours in American history.

c. Anthropology. 5-12. Completion of 24 semester hours in anthropology or 30 semester hours in the broad area of social sciences to include 15 semester hours in anthropology.

d. Economics. 5-12. Completion of 24 semester hours in economics or 30 semester hours in the broad area of social sciences to include 15 semester hours in economics or 30 semester hours in the broad area of business to include 15 semester hours in economics.

e. Geography. 5-12. Completion of 24 semester hours in geography or 30 semester hours in the broad area of social sciences to include 15 semester hours in geography.

f. History. K-8. Completion of 24 semester hours in history to include at least 9 semester hours in American history and 9 semester hours in world history.

g. Psychology. 5-12. Completion of 24 semester hours in psychology or 30 semester hours in the broad area of social sciences to include 15 semester hours in psychology.

h. Social studies. K-8. Completion of 24 semester hours in social studies, to include coursework from at least three of these areas: history, sociology, economics, American government, psychology and geography.

i. Sociology. 5-12. Completion of 24 semester hours in sociology or 30 semester hours in the broad area of social sciences to include 15 semester hours in sociology.

j. World history. 5-12. Completion of 24 semester hours in world history or 30 semester hours in the broad area of social sciences to include 15 semester hours in world history.

k. All social sciences. 5-12. Completion of 51 semester hours in the social sciences to include 9 semester hours in each of American and world history, 9 semester hours in government, 6 semester hours in sociology, 6 semester hours in psychology other than educational psychology, 6 semester hours in geography, and 6 semester hours in economics.

l. Social sciences—basic. 5-12. Completion of 27 semester hours to include 9 semester hours in each of American history, world history, and American government. Holders of the 5-12 social

sciences—basic endorsement may add the following endorsements with six semester hours per endorsement area: 5-12 economics, 5-12 geography, 5-12 psychology, or 5-12 sociology.

13.10(28) *Talented and gifted.* Completion of 12 semester hours of coursework include the following:

(1) Psychology of the gifted.

1. Social needs.
2. Emotional needs.

(2) Programming for the gifted.

1. Prekindergarten-12 identification.
2. Differentiation strategies.
3. Collaborative teaching skills.
4. Program goals and performance measures.
5. Program evaluation.

(3) Practicum experience in gifted programs.

13.10(29) *World language.* K-8 and 5-12. Completion of 24 semester hours in each world language for which endorsement is sought.

These rules are intended to implement Iowa Code chapter 256.